

[1]Nom:

Reseaux Mobiles: Quick Quiz 3 (GSM2)

1. [1.5] If one signal is received at 4W, and the other at 200mW, what is the difference (to 2 significant figures) in levels in dB? 13dB
2. [1] If one signal is sent at 29dBm, what is transmit power in Watts 2SF? 0.79W
3. In order to transmit an information stream at 1kbps, what is the minimum bandwidth (2SF) if: (3 responses)
 - a. [2] the levels of signal and noise are equal? $C=B \log_2 (1+S/N)$ If $S=N$, $B=C=1.0\text{kHz}$
 - b. [2] the noise is one quarter the signal power? $S/N=4$; $B=430\text{Hz}$
 - c. [2] the noise is 3dB higher than the signal power? $S/N=0.5$; $B=1.7\text{kHz}$
4. [1.5] In GSM speech, the most important speech bits are (>1 response possible) :
 - a. Amplified compared with the other bits?
 - b. Repeated automatically on request?
 - c. Protected more than the other bits?
5. [2] Interleaving (>1 response possible) :
 - a. Protects data against bursts of errors ?
 - b. Delays data ?
 - c. Improves speech redundancy ?
 - d. Encrypts data ?
6. [1] Which GSM subsystem provides connection from GSM networks to internet?
 - a. NSS
 - b. OSS
 - c. BSS
7. [1] The BTS and BSC together form what subsystem?
 - a. NSS
 - b. OSS
 - c. BSS
8. [1.5] A location update procedure is triggered by what event?
 - a. handover
 - b. change in IMSI
 - c. change in location area
9. [1.5] What is the reason for cell re-selection hysteresis
 - a. reduces location update load
 - b. increases reliability of location updating
 - c. increases location update sensitivity
10. [2] A mobile is said to be roaming when
 - a. It moves while switched off
 - b. it changes from one location area to another
 - c. the new cell selected has a different LAI
 - d. it receives service from a foreign PLMN